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November 21, 2005

Mr. Stephen L. Johnson, Administrator
Environmental Protection Agency Docket Center
Air and Radiation Docket
Environmental Protection Agency
EPA West
Mail Code 6102T
1200 Pennsylvania Avenue, NW
Washington DC 20460
Attention Docket ID No. OAR-2005-0083

Dear Mr. Johnson,

I am writing to express my concerns regarding the Environmental Protection Agency's (EPA) draft Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada. The revised standards were issued in response to the U.S. Court of Appeals for the District of Columbia Circuit ruling that the time frame for regulatory compliance was not based upon and consistent with the findings and recommendations of the National Academy of Sciences 1995 report entitled "Technical Bases for Yucca Mountain Standards."¹ As a result of this ruling, the EPA's 10,000 year compliance period and the Nuclear Regulatory Commission's licensing rule that implemented the 10,000 year compliance period were voided.

According to section 801(a) of the Energy Policy Act of 1992, the Yucca Mountain site can only receive a license from the Nuclear Regulatory Commission (NRC) if it is in compliance with the EPA public health and safety standards. The law directed EPA to promulgate standards "based upon and consistent with the findings and recommendations of the National Academy of Sciences" (NAS), in order to protect the public from releases of radioactive materials stored or disposed of in the proposed Yucca Mountain high level nuclear waste repository. The NAS has concluded that there is "no scientific basis for limiting the time period of the individual-risk standard to 10,000 years, or any other value."

As the NAS study points out, "the repository could release radionuclides over hundreds of thousands of years or more". Some radionuclides, such as technetium-99 (Tc-99), will likely take longer than 10,000 years to reach the biosphere. The EPA website on Tc-99 states that "as with any radioactive material, there is an increased chance that cancer or other adverse health effects can result from exposure" (to technetium-99)². In fact,

this same website, when referring to standards for Yucca Mountain, states that "Because of the large quantity of spent nuclear fuel and defense high-level waste, Tc-99 is one of the more important radionuclides considered. The standards limit the radiation exposure of individuals and concentrations in the ground water from the release of Tc-99 and other radionuclides in the vicinity of Yucca Mountain." Because it takes longer than 10,000 years for Tc-99 to reach the biosphere, this EPA website would suggest that the EPA standards should apply for a longer than 10,000 year period, as the NAS report has already established.

In light of the NAS findings and recommendations, I am concerned that the proposed rule fails to comply with the clear requirements of the law. In light of this, I respectfully request your assistance and cooperation in responding to the following questions regarding EPA's proposed rule:

- 1) Why do the proposed standards for the limit for Reasonably Maximum Exposed Individual (RMEI) change after 10,000 years? The NAS report specifically does "not recommend that a release limit be adopted", referring to the 10,000 year limit.
- 2) On what basis did EPA choose a 350 millirem per year RMEI between 10,000 and 1,000,000 years? This value is over 23 times greater than the standard for the first 10,000 years. In past recommendations regarding clean-ups at Superfund sites, the EPA has stated that any radiation dose above 15 to 25 millirems per year is inadequate to protect public health. Furthermore, the EPA has also stated that doses of 100 millirems per year produce unacceptable levels of risk. Why shouldn't the standards for Yucca Mountain be set at the same radiation protection levels that the EPA has previously established for protection of public health?
- 3) Why are natural background doses in some regions even mentioned in the guidelines? (page 49037 of the current standards) The RMEI from our waste is on-top-of background doses. Why would we want to increase radiation exposure beyond natural occurring levels, especially to a level (350 millirem per year) that is beyond acceptable levels of risk, according to previous EPA findings?
- 4) Why does the groundwater protection standard change to the overall standard after 10,000 years? The ruling by the U.S. Court of Appeals found that the time frame for regulatory compliance was not consistent with the NAS report. Doesn't the elimination of groundwater protection standards defy the ruling of the U.S. Court of Appeals? EPA did not revise any portion of the ground-water standards, so the Agency states that it will not accept comments on this aspect of the Standards. However, given the court ruling, I believe such an action is arbitrary and capricious and inconsistent with both the law and the clear direction of the court. Furthermore, with respect to the groundwater contamination, the NAS report state that, "peak risks might occur tens to hundreds of thousands of years or even farther into the future." Why, when the contamination will be most dangerous, are the standards weakened?

The current EPA proposed standards mention the National Academy of Public Administration (NAPA) 1997 report on "Deciding for the Future: Balancing Risks, Costs, and Benefits Fairly Across Generations". Included in the NAPA principles is "Every generation has obligations as trustee to protect the interests of future generations." It is our generation that created this waste. We are responsible for protecting future generations from any adverse affects of our nuclear waste. Given the life time of nuclear waste, I do not believe that EPA's proposed standards for radiation exposure after 10,000 years are appropriately protective of public health and the environment or consistent with the law.

I look forward to your response.

Sincerely,

A handwritten signature in cursive script that reads "Edward J. Markey".

Edward J. Markey
Member of Congress

1. Technical Bases for Yucca Mountain Standards (the NAS Report), National Research Council, National Academy Press, 1995.
2. <http://www.epa.gov/radiation/radionuclides/technetium.htm>